

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LAHONTAN REGION

BOARD ORDER NO. 6-96-158
WDID NO. 6B140302001

14-AA-0016

REVISED WASTE DISCHARGE REQUIREMENTS FOR
CLOSURE AND POST-CLOSURE MAINTENANCE

FOR

FURNACE CREEK CLASS III LANDFILL
NATIONAL PARK SERVICE, DEATH VALLEY NATIONAL PARK

Inyo County

The California Regional Water Quality Control Board, Lahontan Region (Regional Board) finds:

1. Discharger

On October 17, 1996, the United State Department of the Interior, National Park Service, submitted a complete revised Report of Waste Discharge for the inactive Furnace Creek Class III Landfill. The Furnace Creek Class III Landfill is owned and was formally operated by the National Park Service. For the purpose of this Regional Board Order (Order), the National Park Service is referred to as the "Discharger."

2. Facility

The Furnace Creek Class III Landfill is the facility that formerly received and continues to store waste. For the purposes of this Order, the Furnace Creek Class III Landfill is referred to as the "Landfill."

3. Order History

The Regional Board previously adopted Waste Discharge Requirements (WDRs) for the active Landfill under Board Order No. 6-76-66, which was adopted on June 24, 1976. Board Order No. 6-93-10014 was adopted on September 9, 1993, and amended the WDRs to incorporate the requirements of Title 40, Code of Federal Regulations, Parts 257 and 258 (Subtitle D) as implemented in the State of California under State Water Resources Control Board (SWRCB) Resolution No. 93-62.

4. Reason for Action

The Landfill ceased accepting waste on September 5, 1995. A complete final Closure and Post-Closure Maintenance Plan (CPCMP) for the Landfill was submitted to the Regional Board by the Discharger in August 1996. The Regional Board is revising these WDRs to document approval of the CPCMP and require the Discharger to complete closure and post-closure maintenance in accordance with the CPCMP. The post-closure maintenance period shall continue until it is demonstrated by the Discharger that the waste no longer poses a threat to water quality.

5. Landfill Location

The Landfill is located approximately one mile northeast of the Furnace Creek Ranch and Inn in the NE/4, Section 15, T27N, R1E, SBB&M, as shown on Attachment "A" which is made a part of this Order.

6. Description of Landfill

The Landfill is inactive and unlined. The footprint of waste discharged at the Landfill is shown on Attachment "B", which is made a part of this Order.

7. Authorized Disposal Sites

This Landfill is inactive, and thus there is no authorized disposal site. If the Discharger decides to reinitiate discharges to the Landfill, a revised Report of Waste Discharge must be submitted.

8. Waste Classification

The Landfill received waste derived from Death Valley National Park. The waste is defined in Sections 2523 and 2524 of Chapter 15, Title 23, California Code of Regulations (Chapter 15), as inert and non-hazardous solid waste, respectively. The waste is defined as municipal solid waste in Subtitle D.

9. Waste Management Unit Classification

Pursuant to Section 2533 of Chapter 15 the inactive Landfill is classified as a Class III waste management unit. The Landfill is classified as Very Small in Subtitle D.

10. Subtitle D Compliance Status

Pursuant to a 1995 ruling by the United States Environmental Protection Agency (EPA), Landfills classified as Very Small do not have a Federal compliance date for most Subtitle D requirements. In accordance with SWRCB Resolution No. 93-62, only the closure requirements of Subtitle D now apply to the Landfill. These WDRs require the Discharger to implement the CPCMP for closure and post-closure maintenance.

11. Closure

The Discharger has proposed closure of the Landfill in accordance with Section 2581 of Chapter 15. For the purposes of complying with State and Federal regulations imposed by the Regional Board, closure consists of installing final cover materials and conducting final grading to promote lateral runoff of precipitation liquids. The proposed final cover system consists of approximately three feet of compacted native soil with a permeability of approximately 1×10^{-5} cm/sec.

12. Engineered Alternative for Final Cover

Chapter 15 contains prescriptive construction standards for the final cover of waste management units, including Landfills. The prescriptive landfill final cover standard includes a foundation layer, no less than one foot of soil of permeability no less than 1×10^{-6} cm/sec, and no less than one foot of native soil for vegetative growth. The cover system proposed in the CPCMP is different than this standard.

In accordance with Section 2510(b) of Chapter 15, an engineered alternative to a prescriptive standard may be approved by the Regional Board. The Regional Board shall only approve of engineered alternatives if the following criteria are met:

- a. The standard is unreasonable and unnecessarily burdensome and will cost substantially more than an engineered alternative **OR** the standard is impractical and will not promote attainment of applicable performance standards; **AND**,
- b. There is a specific engineered alternative which is consistent with the performance goal of the prescriptive standard and affords equivalent protection against water quality impairment.

The Discharger has submitted information as part of the CPCMP which supports approval of the proposed engineered alternative to the prescriptive cover standard. The following is justification for the proposed engineered alternative:

- c. The performance goal of the Landfill cover requirements is interpreted to be the prevention of infiltration of liquids through the waste. Because of the limited rainfall at the Landfill, there is limited potential for the migration of precipitation liquids through the proposed cover system. The Discharger simulated percolation through the proposed cover system using the EPA Hydrologic Evaluation of Landfill Performance (HELP) model. Under the most conservative assumptions the proposed cover system meets the zero infiltration performance goal of the prescriptive standard.
- d. In consideration of the limited rainfall at the Landfill, the main source of infiltration liquids would be caused by ponding. The engineered cover will be graded and maintained to prevent ponding in areas of subsidence and promote lateral runoff of precipitation liquids. Maintenance of a low permeability cover system would be more difficult and costly than the proposed alternative. The additional post-closure cost and effort is unnecessarily burdensome considering that the proposed alternative provides equivalent or better water quality protection than the standard.
- e. The Landfill is located in an extremely remote region. Construction of a low permeability cover system would require the importation of clay and/or synthetic materials. Installation of such a cover system would be significantly more time and labor intensive than the proposed cover system. Considering that the alternative clearly meets the performance goal of the standard, the extra time and cost necessary to meet the standard is unnecessarily burdensome.

- f. The standard includes a low permeability soil layer which would consist of a significant amount of clay. The performance of clay in preventing infiltration is dependant upon maintaining saturation of the clay and preventing desiccation. In consideration of the limited rainfall and extreme evapotranspiration at the Landfill, it would be difficult to maintain saturation of the clay. The clay would likely desiccate and performance would be compromised. As such, the alternative will likely provide superior water quality protection as compared to the standard.

In summary, the standard is unreasonably and unnecessarily burdensome in consideration of technical and economic factors. The proposed alternative is less costly and will provide equivalent, and likely superior, water quality protection. As such, the proposed alternative meets the criteria for Regional Board approval contained in Section 2510(b) of Chapter 15.

13. Post-Closure Maintenance

For the purposes of compliance with State and Federal post-closure maintenance requirements imposed by the Regional Board, the Discharger has proposed a post-closure maintenance program consisting of periodic soil gas monitoring and final cover maintenance. Monitoring and Reporting Program No. 96-158 describes and requires periodic reporting of post-closure maintenance activities.

14. Detection Monitoring

The detection monitoring program at the Landfill consists of Landfill Gas (LFG) monitoring wells and has been designed to detect soil gas emanating from the Landfill. The proposed detection monitoring system is described in Monitoring and Reporting Program No. 96-158.

15. Evaluation Monitoring

An evaluation monitoring program may be required, pursuant to Section 2550.9 of Chapter 15 to evaluate evidence of a release if detection monitoring and/or verification procedures indicate a threat to ground water quality.

16. Corrective Action

A Corrective Action Program (CAP) to remediate released wastes from the Landfill may be required pursuant to Section 2550.10 of Chapter 15 should results of an evaluation monitoring program warrant a CAP.

17. Site Geology

The exposed geologic formations on the Landfill site are mainly lacustrine and older alluvium consisting of yellowish to gray or white beds of tuffaceous silt claystone. This unit ranges in thickness from approximately 1,000 feet in the vicinity of Texas Springs (1 mile south of the site) to approximately 100 feet southeastward along Furnace Creek.

18. Site Hydrogeology

Ground water is present in wells near the National Park Service Headquarters at a depth of 74.5 feet below ground surface. The elevation difference between National Park Service Headquarters and the Landfill is approximately 240 feet. Based on these data, depth to ground water is estimated at 315 feet below ground surface at the Landfill.

19. Site Surface Hydrology

There is no perennial surface water flow at the Landfill.

20. Site Topography

Site topography is shown on Attachment "A", which is made a part of this Order.

21. Climatology

The precipitation in the area of the Landfill is approximately 1.9 inches annually. The evaporation rate is approximately 150 inches annually.

22. Land Uses

The land uses at and surrounding the Landfill consists of the following:

- a. no developed areas within 1,000 feet of the landfill;
- b. open desert land.

23. Financial Assurance

The Discharger has provided financial assurance for site closure and potential future corrective action at the Landfill as required by Chapter 15. The financial assurance has been provided by the Discharger in the form of a letter which indicates that the Federal Government will take the actions necessary to comply with State and Federal regulations.

24. Receiving Waters

The receiving waters are the ground waters of the Death Valley Ground Water Basin (Department of Water Resources Hydrologic Unit No. 6-18).

25. Lahontan Basin Plan

The Regional Board adopted a Water Quality Control Plan for the Lahontan Region (Basin Plan) which became effective on March 31, 1995. This Order implements the Basin Plan.

26. Beneficial Ground Water Uses

The present and probable beneficial uses of the ground waters of Death Valley Ground Water Basin as set forth and defined in the Basin Plan are:

- a. municipal and domestic supply;
- b. agricultural supply;
- c. freshwater replenishment; and
- d. wildlife habitat.

27. California Environmental Quality Act

These WDRs govern an existing facility that the Discharger was formerly operating. The project consists only of the closure of the Landfill and is therefore exempt from the provisions of the California Environmental Quality Act (CEQA) (Public Resources Code Section 21000 et seq.) in accordance with Section 15301 of the CEQA Guidelines.

28. Notification of Interested Parties

The Regional Board has notified the Discharger and all known interested agencies and persons of its intent to adopt revised WDRs for the Landfill.

29. Consideration of Interested Parties

The Regional Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED that the Discharger shall comply with the following:

I. DISCHARGE SPECIFICATIONS

A. Receiving Water Limitations

The storage of waste shall not cause the presence of the following substances or conditions in ground waters of the Death Valley Ground Water Basin:

1. any perceptible color, odor, taste, or foaming; and,
2. any presence of toxic substances in concentrations that individually, collectively, or cumulatively cause detrimental physiological response in humans, plants, animals, or aquatic life.

II. REQUIREMENTS AND PROHIBITIONS

A. General

1. There shall be no discharges of waste to the Landfill.
2. Discharges from the Landfill shall not cause a pollution as defined in Section 13050 of the California Water Code, or a threatened pollution.
3. Discharges from the Landfill shall not cause a nuisance as defined in Section 13050 of the California Water Code.
4. The Landfill shall be protected from inundation, washout, or erosion of wastes and erosion of covering materials resulting from a storm or a flood having a recurrence interval of once in 100 years.
5. The final cover system shall be graded and maintained throughout the post-closure maintenance period to promote lateral runoff of all precipitation liquids, prevent infiltration, and prevent the exposure of waste to environment.
6. Surface drainage from tributary areas, and internal site drainage from surface or subsurface sources shall not contact or percolate through solid wastes discharged at the Landfill.
7. The exterior surfaces of the Landfill shall be graded to promote lateral runoff of precipitation and to prevent ponding.
8. The discharge of wastes from the Landfill in a manner that does not maintain a five foot soil separation between the wastes and the seasonal high ground water elevation is prohibited.

B. Detection Monitoring Program

The Discharger shall maintain a detection monitoring program as required by this Order and described in the Findings of this Order.

C. Evaluation Monitoring Program

The Discharger shall establish an evaluation monitoring program as required in Section 2550.1(a)(2) or (3) of Chapter 15 whenever there is evidence of a potential threat to ground water caused by a release from the Landfill.

D. Corrective Action Program

The Discharger shall institute a CAP when required pursuant to Section 2550.1(a)(4) of Chapter 15.

III. DATA ANALYSIS

Nonstatistical Analysis

The Discharger shall determine whether there is significant physical evidence of a release from the Landfill. Significant physical evidence may include unexplained volumetric changes in the Landfill, unexplained stress in biological communities, unexplained changes in soil characteristics, visible signs of leachate migration, soil gas emanating from the Landfill in concentrations that pose a threat to water quality, or any other change to the environment that could reasonably be expected to be the result of a release from the Landfill.

IV. PROVISIONS

A. Rescission of Waste Discharge Requirements

Board Orders No. 6-76-66 and 6-93-10014 are hereby rescinded.

B. Standard Provisions

The Discharger shall comply with the "Standard Provisions for Waste Discharge Requirements," dated September 1, 1994, in Attachment "C", which is made part of this Order.

C. Monitoring and Reporting

1. Pursuant to the California Water Code Section 13267(b), the Discharger shall comply with the Monitoring and Reporting Program No. 96-158 as specified by the Executive Officer.
2. The Discharger shall comply with the "General Provisions for Monitoring and Reporting," dated September 1, 1994, which is attached to and made part of the Monitoring and Reporting Program.

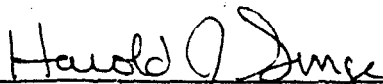
D. Landfill Closure

No later than December 1, 1997 the Discharger shall submit a technical report to the Regional Board documenting implementation of the approved CPCMP for Landfill closure.

E. Landfill Operation

Should the Discharger intend to reinitiate operation of the Landfill, a complete revised Report of Waste Discharge must be submitted to the Regional Board no later than 120 days prior to the proposed date of operation. The Report of Waste Discharge must propose methods for compliance with standards of Chapter 15 and Subtitle D, including composite liners and ground water monitoring requirements.

I, Harold J. Singer, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Lahontan Region, on November 8, 1996.



HAROLD J. SINGER
EXECUTIVE OFFICER

- Attachments: A. Location Map
B. Landfill Footprint
C. Standard Provisions for Waste Discharge Requirements

ATTACHMENT "B"

LANDFILL FOOTPRINT

(TO BE ATTACHED IN ORIGINAL ORDER)

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

STANDARD PROVISIONS **FOR WASTE DISCHARGE REQUIREMENTS**

1. **Inspection and Entry**

The Discharger shall permit Regional Board staff:

- a. to enter upon premises in which an effluent source is located or in which any required records are kept;
- b. to copy any records relating to the discharge or relating to compliance with the Waste Discharge Requirements;
- c. to inspect monitoring equipment or records; and
- d. to sample any discharge.

2. **Reporting Requirements**

- a. Pursuant to California Water Code 13267(b), the Discharger shall immediately notify the Regional Board by telephone whenever an adverse condition occurred as a result of this discharge; written confirmation shall follow within two weeks. An adverse condition includes, but is not limited to, spills of petroleum products or toxic chemicals, or damage to control facilities that could affect compliance.
- b. Pursuant to California Water Code Section 13260(c), any proposed material change in the character of the waste, manner or method of treatment or disposal, increase of discharge, or location of discharge, shall be reported to the Regional Board at least 120 days in advance of implementation of any such proposal. This shall include, but not limited to, all significant soil disturbances.
- c. The Owners/Discharger of property subject to Waste Discharge Requirements shall be considered to have a continuing responsibility for ensuring compliance with applicable Waste Discharge Requirements in the operations or use of the owned property. Pursuant to California Water Code Section 13260(c), any change in the ownership and/or operation of property subject to the Waste Discharge Requirements shall be reported to the Regional Board. Notification of applicable Waste Discharge Requirements shall be furnished in writing to the new owners and/or operators and a copy of such notification shall be sent to the Regional Board.
- d. If a Discharger becomes aware that any information submitted to the Regional Board is incorrect, the Discharger shall immediately notify the Regional Board, in writing and correct that information.
- e. Reports required by the Waste Discharge Requirements, and other information requested by the Regional Board, must be signed by a duly authorized representative of the Discharger. Under Section 13268 of the California Water Code, any person failing or refusing to furnish technical or monitoring reports, or falsifying any information provided therein, is guilty of a misdemeanor and may be liable civilly in an amount of up to one thousand dollars (\$1,000) for each day of violation.

- f. If the Discharger becomes aware that their Waste Discharge Requirements (or permit) is no longer needed (because the project will not be built or the discharge will cease) the Discharger shall notify the Regional Board in writing and request that their Waste Discharge Requirements (or permit) be rescinded.

3. Right to Revise Waste Discharge Requirements

The Regional Board reserves the privilege of changing all or any portion of the Waste Discharge Requirements upon legal notice to and after opportunity to be heard is given to all concerned parties.

4. Duty to Comply

Failure to comply with the Waste Discharge Requirements may constitute a violation of the California Water Code and is grounds for enforcement action or for permit termination, revocation and reissuance, or modification.

5. Duty to Mitigate

The Discharger shall take all reasonable steps to minimize or prevent any discharge in violation of the Waste Discharge Requirements which has a reasonable likelihood of adversely affecting human health or the environment.

6. Proper Operation and Maintenance

The Discharger shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) that are installed or used by the Discharger to achieve compliance with the Waste Discharge Requirements. Proper operation and maintenance includes adequate laboratory control, where appropriate, and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems that are installed by the Discharger, when necessary to achieve compliance with the conditions of the Waste Discharge Requirements.

7. Waste Discharge Requirement Actions

The Waste Discharge Requirements may be modified, revoked and reissued, or terminated for cause. The filing of a request by the Discharger for waste discharge requirement modification, revocation and reissuance, termination, or a notification of planned changes or anticipated noncompliance, does not stay any of the Waste Discharge Requirements conditions.

8. Property Rights

The Waste Discharge Requirements do not convey any property rights of any sort, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations.

9. Enforcement

The California Water Code provides for civil liability and criminal penalties for violations or threatened violations of the Waste Discharge Requirements including imposition of civil liability or referral to the Attorney General.

10. Availability

A copy of the Waste Discharge Requirements shall be kept and maintained by the Discharger and be available at all times to operating personnel.

11. Severability

Provisions of the Waste Discharge Requirements are severable. If any provision of the requirements is found invalid, the remainder of the requirements shall not be affected.

12. Public Access

General public access shall be effectively excluded from disposal/treatment facilities.

13. Transfers

Providing there is no material change in the operation of the facility, this Order may be transferred to a new owner or operator. The owner/operator must request the transfer in writing and receive written approval from the Regional Board's Executive Officer.

14. Definitions

- a. "Surface waters" as used in this Order, include, but are not limited to, live streams, either perennial or ephemeral, which flow in natural or artificial water courses and natural lakes and artificial impoundments of waters. "Surface waters" does not include artificial water courses or impoundments used exclusively for wastewater disposal.
- b. "Ground waters" as used in this Order, include, but are not limited to, all subsurface waters being above atmospheric pressure and the capillary fringe of these waters.

15. Storm Protection

- a. All facilities used for collection, transport, treatment, storage, or disposal of waste shall be adequately protected against overflow, washout, inundation, structural damage or a significant reduction in efficiency resulting from a storm or flood having a recurrence interval of once in 100 years.